

### **ABSTRACT**

A modulator generates a combined signal consisting of audio and video signals and converts the combined signal to one of a plurality of frequencies in dependence upon a desired output frequency and broadcast standard. The modulator includes a summing amplifier, a first frequency synthesizer and a second frequency synthesizer. The summing amplifier has a first input for receiving a video signal, a second input for receiving a first audio signal, a third input for receiving a second audio signal, and an output for outputting a modulated summed signal. The first frequency synthesizer generates a first frequency for mixing with the modulated summed signal to generate a high intermediate frequency (HI-IF) signal. The second frequency synthesizer generates a second frequency for mixing with said HI-IF signal to generate a desired RF output signal.